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From delinquency to the perpetration of child maltreatment: Examining the early adult criminal justice and child welfare involvement of youth released from juvenile justice facilities

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ABSTRACT

The present study prospectively tracks 999 juvenile delinquents (499 females) released from New York State correctional facilities in the early 1990s and describes their engagement in two socially problematic behaviors in early adulthood: child maltreatment and crime. By age 28, nearly two-thirds of sample girls were investigated by child protective services for alleged acts of child maltreatment and over half became clients of both the child welfare and adult criminal justice systems. Prevalence of maltreatment perpetration and dual-system contact were lower for boys but still worrisome. Findings add to a growing body of research documenting the overlap between criminal justice and child welfare populations and highlight the need for greater integration between these systems, particularly when dealing with female clients.

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1. Introduction

Acquiring a comprehensive picture of how juvenile delinquents fare once they leave the auspices of the juvenile justice system is crucial to the development and implementation of effective rehabilitation services. Unfortunately, while it is clear that many youth who offend as adolescents will continue to engage in criminal activity as adults (Colman, Kim, Mitchell-Herzfeld, & Shady, 2009; Eggleston & Laub, 2002; Ezell & Cohen, 2005), far less is known about how these high-risk youth behave in other areas relevant to healthy adult functioning. Intent on documenting adult criminal involvement, researchers have largely ignored the extent to which youth with histories of delinquency engage in other less publicly visible, but equally problematic types of adult antisocial behavior, such as child maltreatment.

Yet, both developmental theory and delinquency research suggest that youth served by the juvenile justice system may be at risk for the perpetration of abuse and neglect. While it has been well documented that crime often begets crime, longitudinal studies of human development indicate that how antisocial tendencies are expressed may also vary over time and across contexts (e.g., Broidy et al., 2003; Huesmann, Eron, Lefkowitz, & Walder, 1984; Pajer, 1998; Sampson & Laub, 1990). Known as "heterotypic continuity", this concept refers to the notion that a single, underlying trait may give rise to different types of behaviors as individuals mature, encounter new social contexts, and take on new social roles. Thus, individuals who commit street-based crimes as teens may go on to engage in more family-centered forms of antisocial behavior (e.g., intimate partner violence and child maltreatment) as they enter young adulthood, establish romantic partnerships, and begin to form families of their own.

Consistent with this hypothesis, findings from two longitudinal studies indicate that individuals with histories of juvenile delinquency are more likely than their less antisocial peers to engage in family violence in adulthood. In the Dunedin Multidisciplinary Health and Development Study, both aggressive delinquency and juvenile police contact significantly predicted physically abusive behavior toward romantic partners in adulthood (Moffitt & Caspi, 1999). Likewise, Giordano and colleagues found girls' and boys' self-reported level of delinquent activity in adolescence to be significantly related to engagement in relationship violence ten years later (Giordano, Millhollin, Cernkovich, Pugh, & Rudolph, 1999). Although the extent to which these findings extend to violence toward children has not been explored, recent work examining the overlap between different types of family-based violence suggests that intimate partner violence and child maltreatment often go hand in hand. Hazen, Connelly, Kelleher, Lansverk, and Barth (2004) analyzed data from the National Survey of Child and Adolescent Well-Being (NSCAW), a probability study of U.S. children involved in child protective services investigations, and found that nearly half of all female caregivers reported for childhood maltreatment also experienced relationship violence at some point in their lifetime.

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Moreover, many correlates of juvenile delinquency are also known risk factors for the perpetration of child maltreatment, suggesting that the level of maltreatment risk found within delinquent samples may be particularly high. Indeed, retrospective studies examining the early histories of known juvenile offenders indicate that one-third to two-thirds of youth involved in delinquency have themselves experienced some form of childhood maltreatment (Wiebush, Freitag, & Baird, 2001), placing them at greater risk for later perpetration. Although the association is far from deterministic, numerous studies have shown that individuals who experience maltreatment as children are significantly more likely than their non-maltreated peers to become abusive and neglectful parents later in life (Dixon, Hamilton-Giachritsis, & Browne, 2005; Egeland, Jacobvitz, & Sroufe, 1988; Kaufman & Zigler, 1987; Pears & Capaldi, 2001).

High rates of early childbearing in delinquent samples may also increase the likelihood that youth with histories of delinquency will maltreat in early adulthood. In the Denver Youth and Rochester Youth Development studies, pregnancy rates by age 17 were high (42% and 29% respectively, particularly among girls involved in some form of delinquent activity (Huizinga, Loeber, & Thornberry, 1993). The proportion of boys heavily involved in delinquent activity who became fathers by age 20 was also considerable, with estimates from two longitudinal studies ranging from 19% to 47% (Thornberry, Wei, Stouthamer-Loeber, & Van Dyke, 2000). As teen parents cope less effectively with the stresses associated with parenting and engage in harsh/punitive parenting practices more often than mature parents (George & Lee, 1997; Stier, Leventhal, Berg, Johnson, & Mezger, 1993), early transitions into parenting roles may increase both opportunity and risk for engaging in child maltreatment.

Finally, other problems frequently found in delinquency samples—mental health disorders (Cauffman, Feldman, Waterman, & Steiner, 1998; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Ulzen & Hamilton, 1998), substance abuse (McClelland, Teplin, & Abram, 2004), and post-release employment difficulties (Bullis, Yovanoff, Mueller, & Havel, 2002; Sampson & Laub, 1990)—may also interfere with youth's ability to successfully transition into healthy caregiving roles. Both population and clinical-based studies of child maltreatment consistently report higher rates of mental health disorders and substance use among parents who maltreat (Debellis et al., 2001; Kelleher, Chaffin, Hollenberg, & Fischer, 1994; Walsh, MacMillan, & Jamieson, 2003). Similarly, unemployment rates and financial hardship have been linked to harsh parental behavior and higher child maltreatment rates in numerous child welfare studies (Gillham et al., 1998; McLoyd, Jayaratne, Ceballo, & Borquez, 1994).

In short, findings from the various lines of research reviewed above suggest that the family sphere represents a likely, albeit largely unexamined, context for the expression of antisocial behavior in early adulthood. Research examining how youth with histories of delinquency fare within this domain is therefore needed in order to gain a more comprehensive picture of these youth's early adult functioning.

1.1. Gender and the expression of adult antisocial behavior

In particular, exploring the extent to which youth with histories of delinquency become abusive and neglectful caregivers may help to broaden our understanding of the long-term consequences and costs of female delinquency. Studies examining criminal recidivism rates among known offenders typically find that women are less likely than men to reoffend (Benda, 2005; Cottle, Lee, & Heilbrun, 2001; Langan & Levin, 2002; Mazerolle, Brame, Paternoster, Piquero, & Dean, 2000; Minor, Wells, & Angel, 2008; Soothill, Ackerley, & Francis, 2003). This finding is often taken to indicate that female offenders are less persistent in their antisocial behavior than male offenders, and hence of lesser societal concern.

However, it is also possible that differences in adult gender roles simply alter the landscape in which men and women have the opportunity to misbehave. Women are more likely than men to live with children and spend considerably more time engaged in caregiving tasks than their male counterparts (Fields, 2003; Kreider, 2008; Zick & Bryant, 1996). Consequently, while this greater pull toward family responsibilities may play a potentially influential role in fostering women's desistence from crime as some research suggests (Broidy & Cauffman, 2006; Graham & Bowling, 1995; Rumgay, 2004), it may also serve to create new family-based opportunities for deviance that are simply less likely to trigger the attention of the criminal justice system. Indeed, research from both criminology and child welfare indicates that women's misbehavior is more likely than men's to center around the home. Women are more likely than men to target their violent behavior toward intimates, parents, and family members (Franke, Huynh-Hohenbaum, & Chung, 2002; Greenfeld & Snell, 1999; Snyder & Sickmund, 2006; Zahn et al., 2008) and are more likely to be identified as perpetrators of abuse and neglect within the general population (Sedlak & Broadhurst, 1996). Thus while it appears that girls with histories of delinquency are less persistent in their antisocial behavior than their male counterparts, the veracity of this assertion may depend upon the context in which youth's behavior is examined. Apparent differences between boys' and girls' behavior may be reduced, or even disappear, if we expand our exploration of adult deviance to include abusive and neglectful acts within the family domain. Cross-domain research aimed at simultaneously documenting boys' and girls' involvement in multiple forms of adult antisocial behavior, such as crime and family violence, is therefore needed to help determine how sex and context interact to shape our understanding of adult outcomes.

1.2. The current study

In hopes of providing a more comprehensive picture of the long-term functioning of youth with histories of delinquency, the present study examines the extent to which male and female youth served by the juvenile justice system engage in both child maltreatment and crime during their early adult years. Three core aims guide our research. First, as little is currently known about how youth with histories of delinquency behave within the family domain, we begin by providing gender-specific information on the prevalence, frequency, and type of youth's adult involvement with child protective services (CPS) up to age 28. We then briefly describe youth's criminal involvement during this same period and explore whether involvement in adult antisocial behavior varies across domain and sex. Specifically, we hypothesize that girls with histories of delinquency will be more likely than boys with histories of delinquency to become perpetrators of child abuse and neglect, while boys with histories of delinquency will be more likely than girls with histories of delinquency to enter the adult criminal justice system.

Third, we explore how knowledge of maltreatment outcomes adds to our understanding of the prevalence and scope of adult antisocial behavior within delinquent samples by describing patterns of cross-system involvement in early adulthood in a sample of youth released from juvenile justice facilities. How many of these youth avoid contact with the adult criminal justice system, but go on to maltreat the children under their care? How many offend in both domains? Do patterns of cross-systems involvement vary by gender and, if so, what are the theoretical and practical implications of these differences?

2. Methods

2.1. Research design

To answer these questions, we use existing state research, child welfare, and criminal justice databases to identify and prospectively track a large sample of male and female youth served by the NYS juvenile justice system in the early 1990s. Participants' names are drawn from a research database originally created to examine short-term

criminal recidivism rates among known juvenile offenders (Frederick, 1999). As part of that study, a comprehensive list of juvenile delinquents (n = 7465; 849 females) discharged from a mixture of secure, limited secure, and non-secure residential, correctional programs run or administered by the NYS Division for Youth (now the NYS Office of Children and Family Services, or OCFS) between January 1, 1991 and December 31, 1994 was generated. Extensive case file reviews were then conducted on a sub-sample of juvenile delinquents (n = 2418; 521 females) served at one of 14 targeted facilities. Selected facilities were chosen to represent the full continuum of residential services seen in the full cohort (e.g., security level, male versus female programming) and on the basis of the quality of their record keeping.

The present study builds on this earlier work and selects a sub-sample of youth included in the case file review sample to follow forward through time. To gain an adequate picture of youth's functioning in early adulthood, we track selected youth over an approximately 12 year period, beginning at their date of community release and continuing through their 28th birthday. We then document youth's engagement in two distinct types of adult antisocial behavior during this follow-up window using multiple state administrative databases.

2.2. Sample

To maximize the number of girls observed, we selected all 501 girls from the original case file review sample who had reached their 28th birthday by the start of our data collection activities. We then randomly selected a comparable sized sample of age-eligible males. Two cases were subsequently dropped due to excessive missing case file data, leaving a final study sample of 999 delinquents (499 females).

Racial/ethnic composition of our chosen sample is comparable to the full discharge cohort from which participants were drawn, and is highly similar across the sexes. Most participants are Black, Non-Hispanic (59% girls, 55% boys), followed by White, Non-Hispanic (24% girls, 22% boys), White-Hispanic (10% girls, 11% boys), Black-Hispanic (3% girls, 6% boys) and other (4% girls, 6% boys). Consistent with their in-care status, participants are serious delinquents with extensive arrest histories. Average number of prior arrests is 3.9 for girls and 6.8 for boys. All participants were no longer in OCFS-administered residential placements by age 18, with an average age at community release of 15.67 years old (SD = 1.0).

2.3. Measures

Adult outcome measures are derived from official state records housed in three administrative databases: 1) CONNECTIONS, the database used to track calls made to the NYS child abuse and neglect hotline from intake through CPS investigation, 2) the NYS Offender-based Transaction Statistics Computerized Criminal History (OBTS/CCH) database, used to record all NYS-based arrests of individuals age 16 or older from point of arrest through disposition and sentencing, and 3) the NYS Department of Correctional Services (DOCS) database used to track NYS prison admission and discharge dates. For a comprehensive discussion of these data systems and the search protocols and matching criteria used to identify person-based matches, see Colman, Kim, Mitchell-Herzfeld, and Shady (2008).

2.3.1. Adult perpetration of child abuse and neglect

All official CPS reports matched to a study participant and referencing an event before age 28 were extracted from the CONNECTIONS system and coded for participant role (perpetrator-yes/no), types of alleged maltreatment (neglect, physical abuse, sexual abuse), and investigation outcome (unfounded, indicated). A series of variables reflecting whether a participant was ever reported for each type of maltreatment and if so, how often, was then created. Participants were classified as an *alleged perpetrator* of abuse and neglect when they were named in a perpetrator role within at least one CPS investigation, regardless of investigation outcome. Participants were classified as a *confirmed perpetrator* when credible evidence substantiating the alleged maltreatment was found in at least one CPS investigation, resulting in an indicated report.

2.3.2. Adult crime

In New York State, youth are charged as adult offenders when they reach age 16. All adult arrest events matched to a study participant were extracted from the OBTS/CCH system and coded for severity (e.g., felony), type (e.g., any arrest, violent, property, and drug) and disposition outcome (e.g., conviction). Records were then aggregated across the follow-up period to create a series of variables measuring the prevalence and rate of youth's arrest and conviction experiences between the ages of 16 and 28. Youth were classified as having been incarcerated if either disposition or prison records obtained from the NYS DOCS indicated at least one stay in either local jail or state prison. Number of years incarcerated was estimated for those with incarceration histories using jail sentences included in the OBTS/CCH system, and actual prison admission and discharge records obtained from NYS DOCS.

2.3.3. Cross-system involvement

Participants' contact with both systems was coded using a single, four-category indicator of cross-systems involvement. Individuals assigned to the “No Contact” category had no adult record of either CPS investigation or criminal justice (CJ) contact. Individuals in the “CPS Only” group were reported for child maltreatment but did not experience a criminal arrest, while individuals in the “CJ Only” group were arrested but never named as a perpetrator in a CPS report. Individuals assigned to the “Dual Contact” group experienced both CPS investigation and criminal arrest during the follow-up period.

3. Results

3.1. Perpetration of abuse and neglect

Consistent with notions of heterotypic continuity and study hypotheses, sample youth were highly likely to come into contact with CPS during their early adult years, generating over 1300 maltreatment investigations during the follow-up period. As shown in Table 1, 62% of girls released from juvenile justice facilities were named as an alleged perpetrator of abuse and neglect in at least one CPS investigation prior to age 28. Prevalence of alleged perpetration was lower among sample boys, but still worrisome, with 17% alleged to have maltreated the children under their care. In keeping with general trends within the child welfare system, allegations of child neglect were most common, followed by physical and then sexual abuse. When investigation outcome was taken into account, 68% of reported girls and 54% of reported boys had credible evidence confirming the alleged maltreatment within at least one CPS report, bringing the prevalence of confirmed perpetration to 42% for sample girls and 9% for sample boys.

Rate of CPS contact was also high, as youth who came to the attention of the child welfare system typically did so on more than one occasion. Over two-thirds (68%) of allegedly perpetrating girls were named in two or more CPS calls during the follow-up window, racking up an average of 3.95 investigations per girl. Similarly, 47% of boys identified as an alleged perpetrator were named in multiple CPS reports, generating an average of 2.06 investigations per alleged perpetrator.

As suggested by the disparate numbers reported above, chi-square and one-way anova comparisons confirmed that both the prevalence and rate of CPS contact varied significantly by sex. Consistent with study hypotheses, girls were approximately 3.5 times more likely than boys to be identified as an alleged perpetrator of child abuse and neglect during their early adult years, and when reported were investigated more often.

Table 1
Early adult CPS and criminal justice involvement of youth formerly served in juvenile justice facilities.

Type of system contact	Males (n = 500)		Females (n = 499)		Significance test	
	Prevalence (%)	Rate	Prevalence (%)	Rate	Chi-square	F-test
CPS investigation						
Alleged perpetrator	17	2.06	62	3.95	213.10***	22.43***
Neglect	16	2.04	59	3.79	197.26***	19.62***
Physical abuse	5	1.16	24	1.84	71.92***	6.14*
Sexual abuse	2	1.75	6	1.11	11.57***	5.40*
Confirmed perpetrator	9	1.62	42	2.54	145.18***	9.24**
Criminal justice						
Arrest	89	8.97	81	5.95	10.77***	54.54***
Felony	83	5.16	63	2.72	47.91***	121.04***
Violent	77	3.53	57	2.21	43.75***	62.85***
Property	66	3.47	55	3.28	14.29***	.51
Drug	61	3.36	36	2.72	59.18***	5.32*
Conviction	85	5.72	69	4.09	37.61***	28.37***
Incarceration	71	3.87	32	1.53	153.18***	85.99***

* $p \leq .05$.
** $p \leq .01$.
*** $p \leq .001$.

3.2. Adult crime

In keeping with the high recidivism rates observed in other samples of youth with histories of serious delinquency, sample youth were also highly likely to enter the adult criminal justice system (see Table 1). By age 28, 89% of sample boys had been arrested on adult charges at least once, as had 81% of sample girls. In addition, recidivating youth tended to be serious, repeat offenders. Eighty-three percent of the boys and 69% of the girls that recidivated were arrested on more than one occasion, accumulating an average of 8.97 and 5.95 adult arrests respectively. Felony-related charges were common, with 83% of sample boys and 63% of sample girls charged with at least one felony-level offense. In addition, a substantial proportion of both our male and female sample experienced a period of incarceration during our follow-up period, potentially diminishing the rate of criminal arrest and maltreatment perpetration in both groups.

However, despite the exceedingly high recidivism rates observed for both boys and girls, prevalence and rate of youth's criminal involvement still varied significantly by sex. As hypothesized, boys were significantly more likely than girls to experience all types of adult arrest. They also tended to accumulate more arrest charges when they did recidivate. In addition, substantial sex differences in the prevalence of adult conviction and incarceration also emerged. Eighty-five percent of sample boys were convicted on at least one occasion, compared to only two-thirds of sample girls. Similarly, boys with delinquency histories were far more likely than girls with delinquency histories to experience incarceration.

3.3. Cross-system involvement

Fig. 1 displays the patterns of cross-system involvement found for both boys and girls. Consistent with the findings reported above, 72% of sample boys were single-system clients, offending only in the criminal justice domain. Sixteen percent came into contact with both CPS and criminal justice services, 11% avoided contact with either system, and only three boys, or approximately 1% of our male sample, were investigated by CPS but never touched the criminal justice system. Conversely, girls were most likely to be dual-system clients,

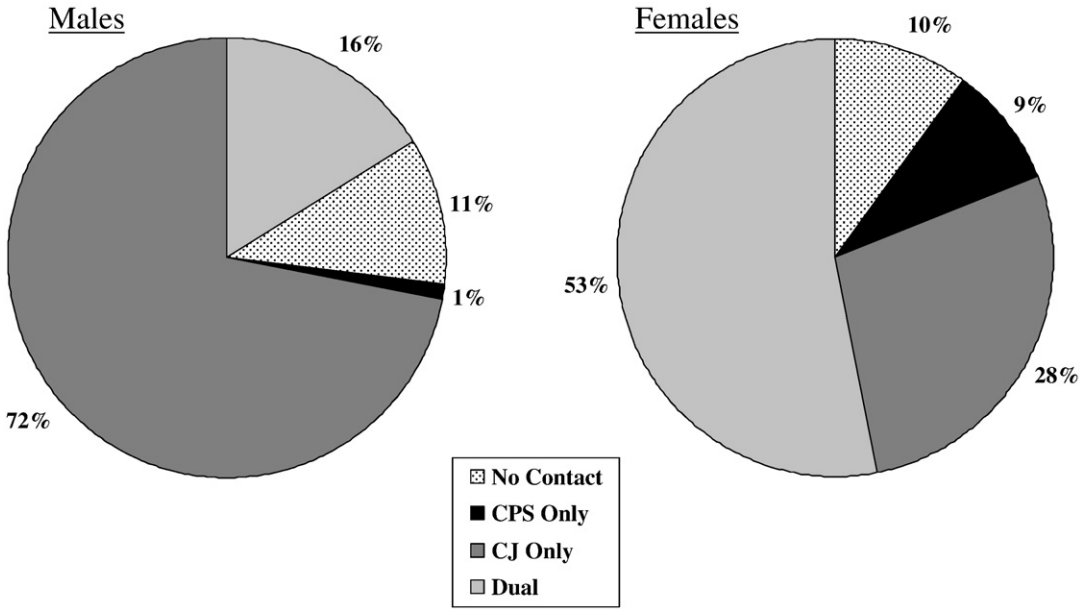

Fig. 1. Cross-systems involvement.

with 53% coming to the attention of both the CPS and criminal justice systems between the ages of 16 and 28. Just over a quarter experienced only adult arrest, 10% had no system contact, and 9% were investigated by CPS exclusively. Thus, while domain-specific findings indicate that girls were more likely than boys to maltreat and boys were more likely than girls to criminally offend, the overall proportion of youth with delinquency histories engaging in some form of adult antisocial behavior—either the perpetration of child maltreatment or crime—was highly comparable across the sexes (89% for sample boys and 90% for sample girls). Moreover, girls were more likely than boys to experience the co-occurrence of problems in early adulthood (53% and 16%, respectively) and to have evidence of their adult antisocial behavior "missed" by criminal justice-based indicators. Forty-three of the 94 girls who avoided contact with the adult criminal justice system were investigated by CPS, cutting the number of girls who appeared "successful" from a criminal justice perspective nearly in half.

Table 2 displays the CPS and adult criminal profiles of the boys and girls assigned to various cross-systems groups. Descriptive statistics for CPS Only boys are not presented, as only three boys fell into this category. Dual Contact boys entered the adult criminal justice system several years before their first report to CPS. They were arrested significantly more often ($F(1,441) = 7.93$, $p < .01$) than their CJ Only peers, but were no more likely to be charged with a violent, property or drug-related charge. Prevalence of conviction was similar across groups; however, boys in the Dual Contact group spent substantially less time incarcerated than boys in the CJ Only group ($F(1,441) = 6.23$, $p < .05$).

Dual Contact and CPS Only girls were similar in the timing, nature, and degree of their CPS involvement, with no significant differences found between groups on age at first contact, number of CPS reports, types of allegations raised, or prevalence of confirmed perpetration. Dual Contact girls did differ, however, from their CJ Only peers on several measures of criminal activity. Dual Contact girls were older at first criminal arrest ($F(1, 403) = 7.99$, $p < .01$) and they experienced adult arrest ($F(1, 403) = 5.31$, $p < .05$), conviction, ($F(1,403) = 4.80$, $p < .05$) and incarceration ($F(1, 403) = 4.53$, $p < .05$) significantly more often than girls who migrated solely into the adult criminal justice system. Girls in the Dual Contact group were also more likely than girls in the CJ Only group to be arrested for a property-related crime ($F(1,403) = 5.76$, $p < .05$), but were no more likely than their peers to be brought up on violent or drug-related charges.

4. Discussion

In an effort to add to current understanding of the long-term consequences of juvenile delinquency, the present study examined the extent to which youth released from juvenile justice facilities engage in two socially significant behaviors in early adulthood: the perpetration of child maltreatment and crime. Findings add to a growing body of research linking criminal justice and child welfare populations (e.g., Johnson-Reid & Barth, 2000; Phillips, Burns, Wagner, & Barth, 2004; Phillips & Gleeson, 2007; Wiebush et al., 2001), and suggest that efforts to integrate programming and research efforts across systems may prove beneficial to both fields, particularly for female clients.

4.1. Perpetration of child maltreatment

Consistent with previous research documenting a link between adolescent delinquency and adult interpersonal violence (Giordano et al., 1999; Moffitt & Caspi, 1999), study findings suggest that a substantial proportion of youth exiting juvenile justice facilities will enter the child welfare system as perpetrating adults. In our sample of adjudicated delinquents released from NYS custody in the early 1990s, a disturbing 62% of sample girls and 17% of sample boys were reported to CPS for alleged acts of child maltreatment prior to reaching their 28th birthday. Over half of those investigated had the allegations against them substantiated, resulting in a confirmed perpetration rate of 42% for sample girls and 9% for sample boys.

4.1.1. Implications and practice recommendations

While the size of these numbers in many ways speak for themselves, placing our perpetration rates in an appropriate context is challenging, as we know of no studies reporting on the prevalence of child maltreatment perpetration in the general population. Indeed, even when researchers have sought to document the prevalence of maltreatment perpetration within recognized high-risk groups, estimates of actual perpetration have varied widely. For example, one of the most frequently studied risk factors for the perpetration of child maltreatment is a parental history of child abuse or neglect (e.g., Dixon et al., 2005; Egeland et al., 1988; Ertem, Leventhal, & Dobbs, 2000; Kaufman & Zigler, 1987; Pears & Capaldi, 2001; Widom, 1989), yet reported estimates of intergenerational transmission effects have varied widely, from a low of 1% (Widom, 1989) to a high of nearly 40%

Table 2
Cross-system profiles of youth involved in CPS and adult criminal justice.

Type of system contact	Males		Females		
	CJ Only (n = 362)	Dual (n = 81)	CPS Only (n = 43)	CJ Only (n = 139)	Dual (n = 266)
CPS					
Age at first CPS report	n/a	23.38	22.3	n/a	21.68
Total CPS reports	n/a	2.06	3.19	n/a	4.08
Ever alleged perpetrator of					
Neglect	n/a	93%	95%	n/a	94%
Physical abuse	n/a	30%	33%	n/a	39%
Sexual abuse	n/a	10%	5%	n/a	10%
Ever confirmed perpetrator	n/a	54%	67%	n/a	68%
Criminal justice					
Age at first adult arrest	17.46	17.25	n/a	18.43	19.19
Total arrests	8.6	10.62	n/a	5.01	6.43
Ever arrested for					
Felony offense	94%	91%	n/a	78%	78%
Violent offense	86%	90%	n/a	69%	71%
Property offense	74%	79%	n/a	60%	71%
Drug offense	69%	64%	n/a	41%	46%
Ever convicted	96%	98%	n/a	80%	88%
Ever incarcerated	80%	84%	n/a	32%	43%
Years incarcerated	4.13	2.79	n/a	1.85	1.40

(Egeland, Jacobvitz, & Paptola, 1989). Much of this variation is likely due to differences in research methods, including choice of study design (retrospective versus prospective), length of follow-up, and choice of maltreatment measure (e.g., self-report, criminal arrest, etc). Keeping these issues in mind, Kaufman and Zigler (1987) reviewed the early intergenerational transmission literature and concluded that approximately one-third of abused parents go on to maltreat their own children. Recent research by Pears and Capaldi (2001) supports this estimate. In their longitudinal study of youth at risk for delinquency, 23% of parents with self-reported histories of child maltreatment were described by their 21 year-old offspring as having been physically abusive parents.

Using these figures as a benchmark, we note that the girls included in our sample maltreat at a higher rate than that typically documented within one of child welfare's most recognized at-risk populations. Yet, child abuse prevention efforts have not traditionally targeted girls served by the juvenile justice system, nor has reducing child maltreatment been a goal of the juvenile justice system. This is unfortunate, as the presence of so many high-risk youth within a readily accessible and structured environment arguably provides treatment providers with a unique opportunity to proactively engage youth in preventive services. Moreover, previous research documenting an association between early child maltreatment experiences and subsequent delinquency/criminal offending (Smith & Thornberry, 1995; Teague, Mazerolle, Legosz, & Sanderson, 2008; Widom & Maxfield, 2001) suggests that intervening with histories of delinquency has the potential to benefit both systems. If fewer girls with delinquency histories go on to maltreat their own children, the number of those children who grow up to become clients of the juvenile justice system in their own right may also be reduced. We therefore recommend that juvenile justice and child welfare professionals work together to explore ways to integrate child abuse prevention programming, such as family planning and parenting education, into the array of services offered to girls served in juvenile justice facilities. Incorporating trauma-sensitive treatment modalities that seek to educate youth about the links between past traumatic experiences and future behavior may also prove beneficial, as the high prevalence of perpetration likely stems, at least in part, from the fact that many girls with delinquency histories were themselves victimized as children.

Although maltreatment perpetration rates were substantially lower among sample boys, offering similar services to males involved with the juvenile justice system may also be prudent, as males comprise approximately 85% of the juvenile delinquents in custodial care (Snyder & Sickmund, 2006), making them an important intervention group in terms of sheer numbers. Furthermore, while contact with children is normative for many women, even among those heavily involved with the criminal justice system (Mumola, 2000), men are less likely than women to live with their offspring and spend considerably less time involved in caregiving tasks (Fields, 2003; Zick & Bryant, 1996). In particular, research suggests that male offenders are infrequent caregivers that often live apart from their children (Graham & Bowling, 1995; Lewis, Yeager, Lovely, Stein, & Cobham-Portorreal, 1994; Mumola, 2000). As we did not have access to information regarding our participants' parenting status or living arrangements, our prevalence figures provide a conservative estimate of youth's propensity to maltreat. Had we been able to limit our analysis to only those individuals in caregiving roles, the prevalence of perpetration would likely have been even higher for both sexes, especially sample boys, as males are more likely to be impacted by this type of opportunity bias. Moreover, over two-thirds of our sample males were incarcerated for an average of nearly four years during our follow-up period, substantially reducing their opportunities to maltreat. Thus as more programs are put into place to encourage male offenders' involvement with their offspring, like the federal government's From Prison to Home initiative, the number of males with delinquency histories who go on to maltreat may also increase, particularly if efforts to foster healthy parenting are not simultaneously undertaken.

4.2. Gender and adult cross-system involvement

Examining child welfare outcomes in conjunction with adult criminal activity also serves to highlight the breadth and complexity of the challenges facing girls with delinquency histories as they exit custodial care. Consistent with study hypotheses and past research detailing male offenders' greater re-involvement with criminal justice services (Benda, 2005; Cottle et al., 2001; Langan & Levin, 2002; Soothill et al., 2003), the girls included in our study sample were re-arrested, convicted, and incarcerated significantly less often than their male counterparts. Adding child welfare outcomes to this picture changed little for sample males. Almost all of the boys in our sample who were identified as alleged perpetrators of abuse and neglect were also picked up by the adult criminal justice system. Only three boys, or approximately 1% of our male sample, were investigated by CPS but never touched the criminal justice system. Conversely, 43 girls, or 9% of our female sample, avoided contact with the criminal justice system but continued to engage in socially problematic behavior, coming to the attention of child welfare authorities an average of 3.19 times. As a result, including child welfare outcomes in our assessment of early adult functioning cuts the proportion of girls assigned to our "healthy" group nearly in half and largely eliminates the disparity between the sexes in terms of antisocial activity. When we use contact with either the adult criminal justice or child welfare system as our indicator of adult deviance, 89% of sample boys and 90% of sample girls engage in some form of antisocial behavior before age 28.

Cross-system analyses also indicate that the co-occurrence of child maltreatment and crime is a significant issue for girls released from juvenile justice facilities. Rather than fostering desistence from crime as suggested by some researchers (Graham & Bowling, 1995), the transition into early adulthood and the assumption of caregiving roles appear to have provided a second landscape for the expression of girls' antisocial tendencies. As noted above, nearly two-thirds of sample girls engaged in acts of child maltreatment in their early adult years. In addition, most remained highly active within the criminal justice system. Consequently, over half of our female sample (53%) went on to become dual-system clients in early adulthood, receiving both child welfare and criminal justice services prior to age 28. Moreover, girls who entered both systems experienced greater difficulties within each system than their single-system peers. Dual Contact girls were arrested, convicted, and incarcerated more often than girls who touched only the adult criminal justice system and tended to be named as an alleged perpetrator of child maltreatment more often than their CPS Only peers.

4.3. Future research

While our sample represents neither the entire child welfare nor adult female offender populations, these findings complement recent work within both spheres demonstrating considerable system overlap among female clients. Statistics derived from the National Survey of Child and Adolescent Well-Being (NSCAW), a probability study of U.S. children involved in child protective services investigations, indicates that as many as one in eight children reported for child maltreatment have a parent, usually a mother, who has been arrested within the past six months (Phillips & Gleeson, 2007). Similarly, studies of women offenders suggest that CPS involvement within this group is high and that parenting issues often play a central role in women's rehabilitation and reintegration journeys (Brown & Bloom, 2009; Harm & Phillips, 2001; Richie, 2001). Thus, as Phillips and Gleeson (2007, p.5) note, "It is important that policy makers recognize the interplay between these systems and the mutual, underlying social problems that both systems are ensnarled in addressing."

To accomplish this aim, more in-depth research on the factors associated with cross-system contact and the experiences of dual-system clients is needed. Specifically, we intend to use the data collected in the course of our research to explore two additional questions. Do dual-system clients differ from child welfare and criminal justice clients in the nature and severity of their juvenile risk factors (e.g., substance abuse, mental health, personal maltreatment histories, poverty, etc)? How does adult contact with one system affect the timing and likelihood of involvement with the other? Given that Dual Contact girls have higher rates of arrest, conviction, and incarceration than girls who only touch the criminal justice system, does contact with criminal justice services increase the likelihood that CPS services will be called in?

Finally, if we wish to understand fully the child welfare costs associated with juvenile delinquency, research on additional populations is needed. All of the youth included in our study sample were serious delinquents who were placed into the care and custody of the state by the family court system. As most youth involved in delinquency never enter custodial care, future research should examine whether the high rate of child maltreatment found here generalizes to youth served at other levels of the juvenile justice system (e.g., diversion and probation). Similarly, efforts should be made to document the child maltreatment and foster care histories of the offspring of youth served within the juvenile justice system. The current study captured only those incidents of child maltreatment in which the study participant was named as the alleged perpetrator. Yet, the children of parents who have been served by the juvenile justice system may have extensive contact with the child welfare system outside of this narrow purview, particularly if the parent in question never assumes, gives up, or loses custody of the child.

4.4. Conclusion

Youth exiting juvenile justice facilities are at high risk for both the perpetration of child maltreatment and criminal offending during their early adulthood years. Findings add to a growing body of research documenting the overlap between criminal justice and child welfare populations and highlight the need for greater integration of both research and practice efforts across these systems, particularly when dealing with female clients.

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